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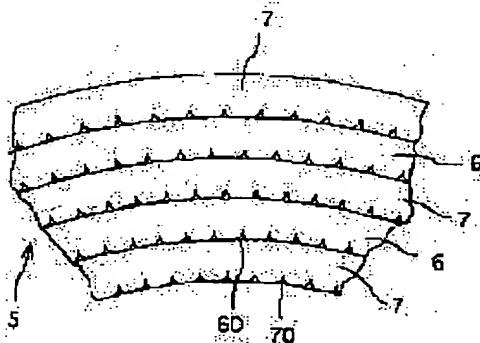
(54) ELECTRODE OF SPIRAL TYPE ELECTRODE

(57)Abstract:

PURPOSE: To provide electrodes for use in a spiral type battery by which the durability and reliability of the battery are enhanced by preventing undesired deformation of long-size sheet-shaped electrodes when they are curved into spirals.

CONSTITUTION: A plurality of line-shaped grooves 60, 70 for reducing winding distortion are formed on the respective inside principal planes of long-size sheet shaped positive and negative electrodes 6, 7 and approximately along their cross direction, the electrodes curved into spirals. Thus when the long-size sheet-shaped electrodes 6, 7 are curved into

spirals the inside principal planes of the electrodes 6, 7 are pressed, and pulling of the outside principal planes due to the reaction of the pressing can be reduced or prevented.



Also, the inside principal planes can be kept from swelling to the inside of bores and cracking, with the result that the durability and reliability of the battery can be enhanced.

(Example 1)

The electrodes assembly 5 consists of sheet-shaped positive electrode 6 and negative electrode 7 produced in spiral-shape. Separator(not shown in Figures) was interposed between the positive electrode 6 and negative electrode 7. The electrodes assembly 5 was composed as follows: The positive electrode 6 with about 0.7 mm thickness, about 190 mm width and about 800 mm length was prepared by pressing and attaching nickel hydroxide paste to expanded metal as current collector made of nickel(See Fig.2). Then, plural line-shaped grooves 60 with about 0.3 mm depth and about 0.5 mm width were prepared on the main face being inside when it is winded in spiral shape. The line-shaped grooves on the most exterior part when wound in spiral shape were prepared with about 10 mm pitch, those on the most interior part when wound in spiral shape were prepared with about 3 mm pitch, and the pitch became smaller as the part became inside of the spiral. The grooves 70 were prepared on the negative electrode 7, too. Then, the positive electrode 6 and the negative electrode 7 were wound after the separator(not shown in Figures) was interposed between the electrodes(see Fig.3). The battery was prepared by using KOH and LiOH aqueous solution as electrolyte solution.